

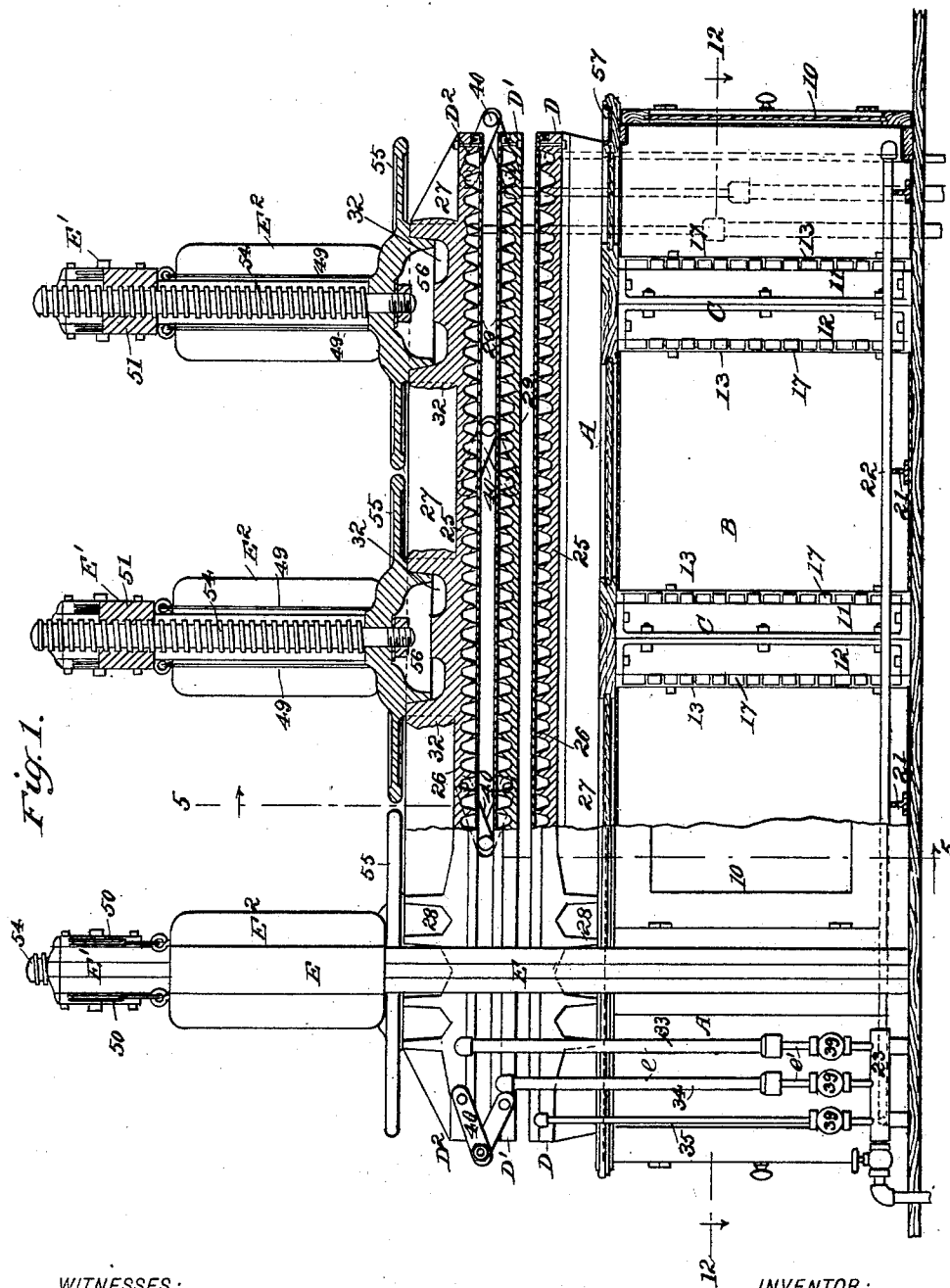
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5 Sheets—Sheet 1.

C. SPREWITZ.
VENEERING MACHINE.

No. 477,158.

Patented June 14, 1892.



WITNESSES:

J. H. Griswell.
C. Sedgwick

INVENTOR:

Charles F. Brewster

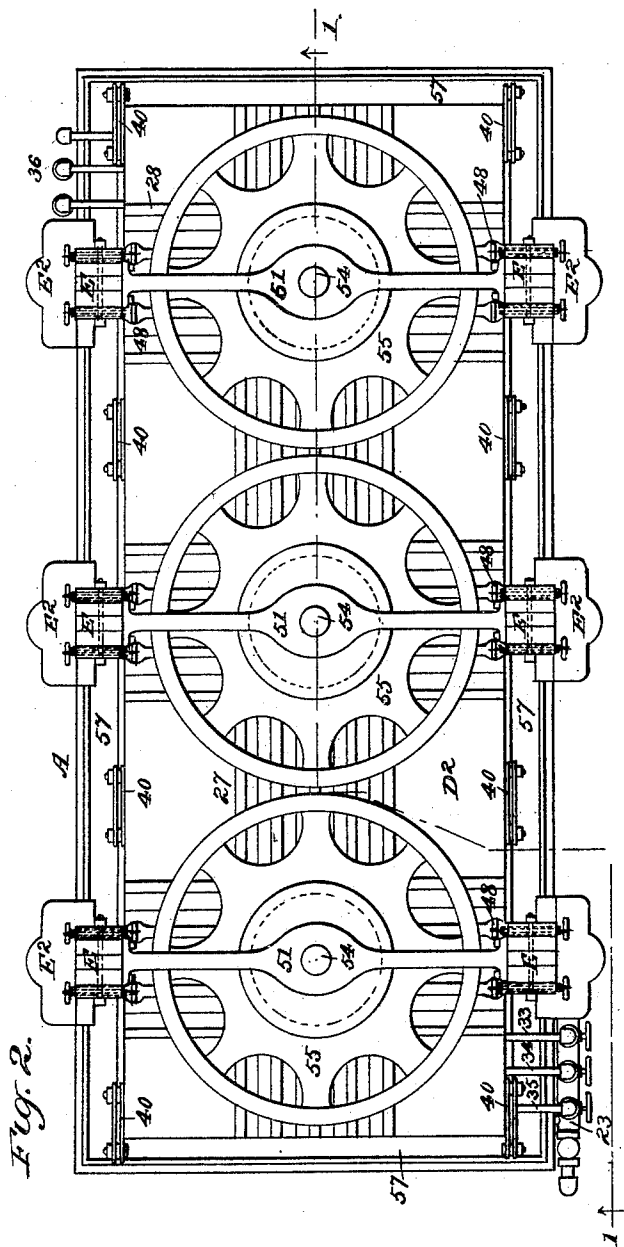
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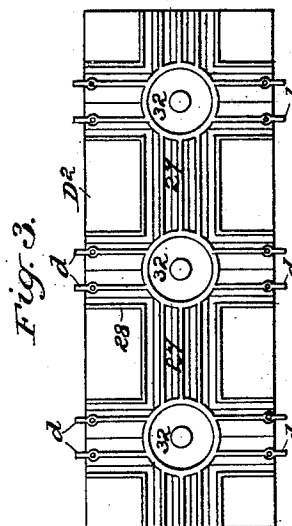
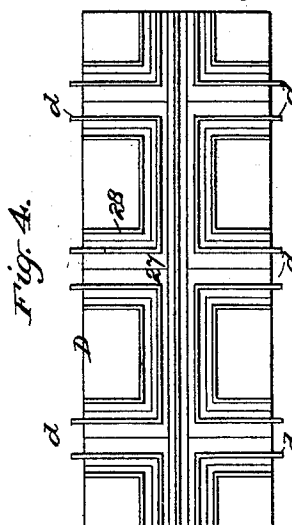
No. 477,158.

Patented June 14, 1892.



WITNESSES:

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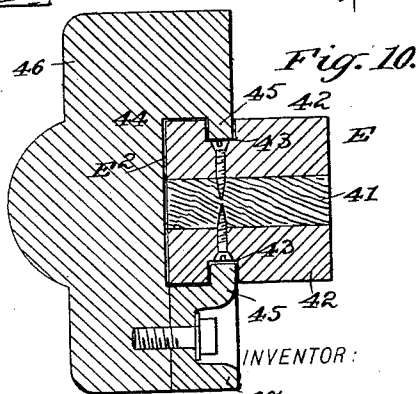
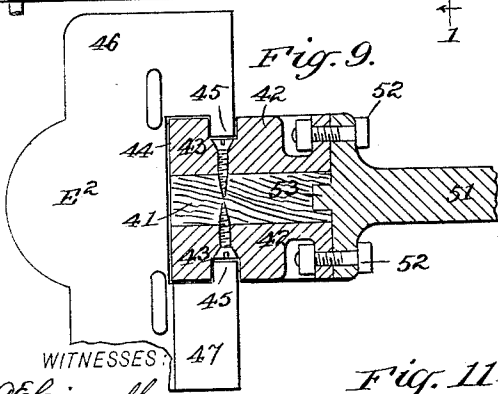
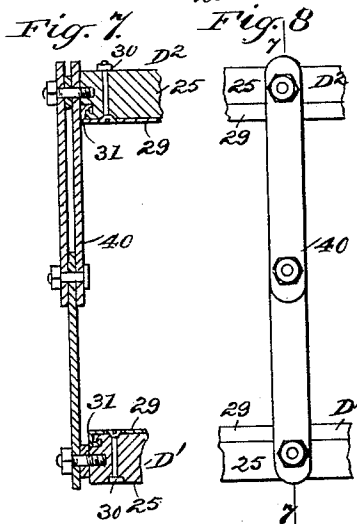
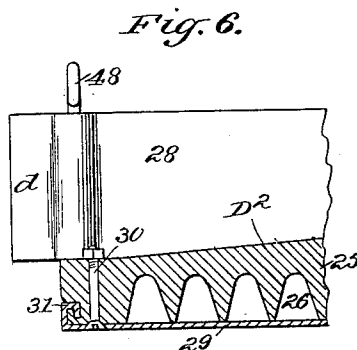
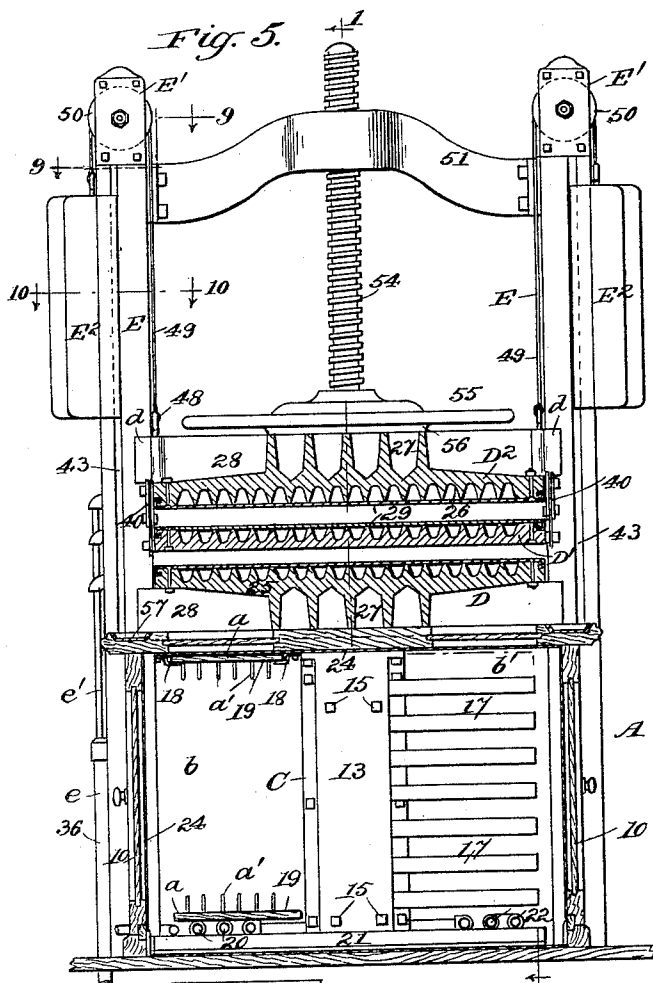
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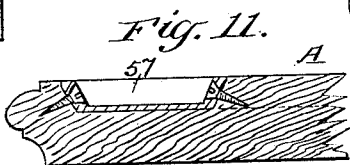
C. SPREWITZ.
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No. 477,158.

Patented June 14, 1892.



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(No Model.)

5 Sheets—Sheet 4.

C. SPREWITZ.
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Patented June 14, 1892.

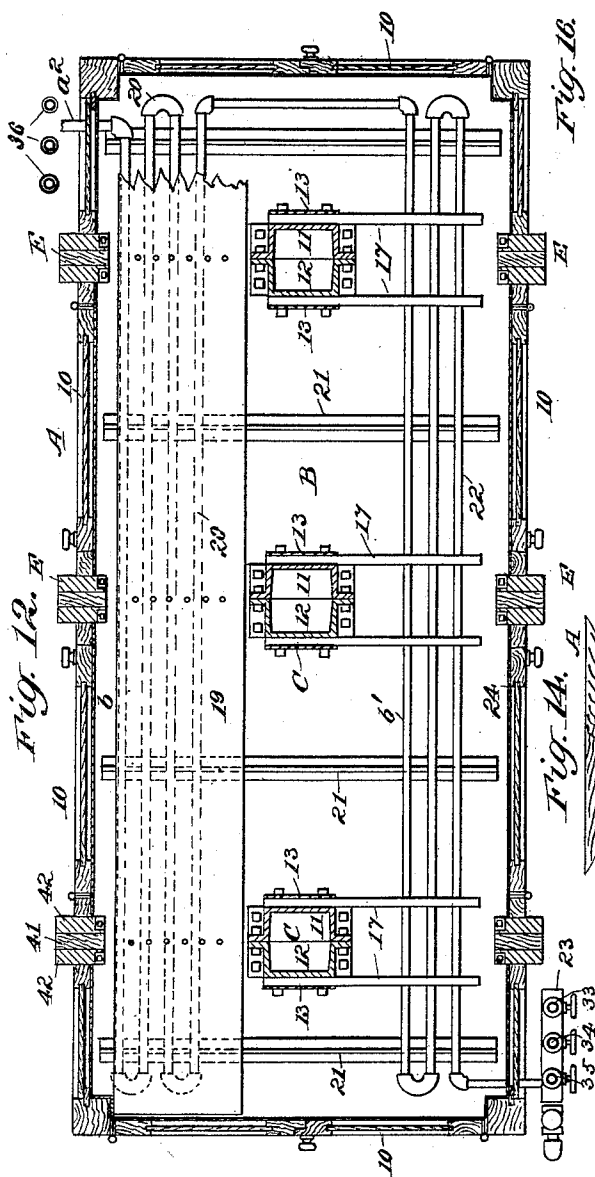


Fig. 12.

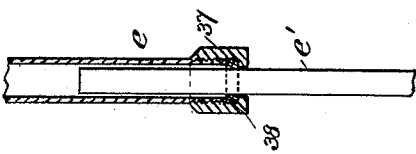


Fig. 16.

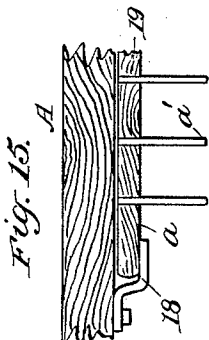


Fig. 15.

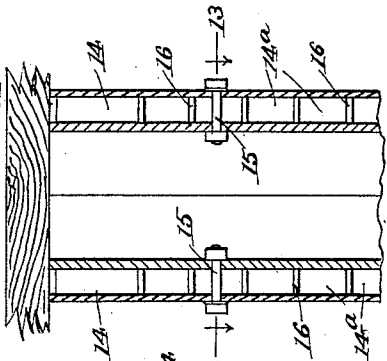


Fig. 14.

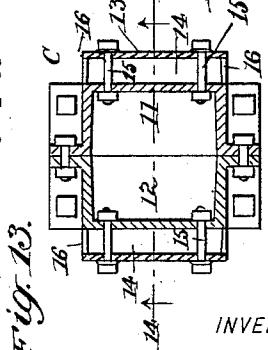


Fig. 13.

WITNESSES:

J. H. Buswell.
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(No Model.)

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Fig. 17.

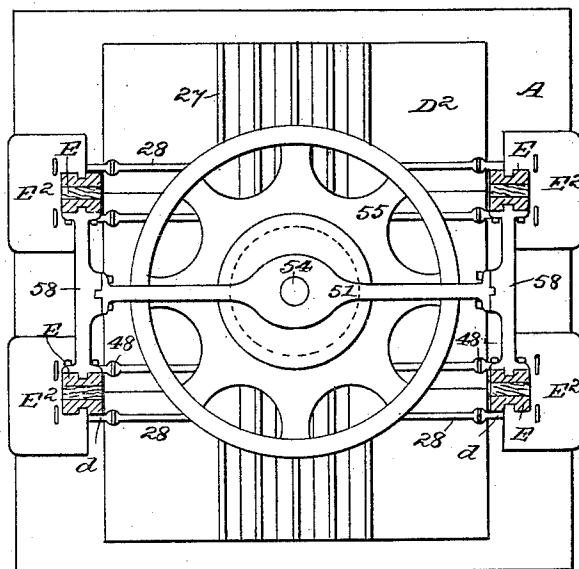
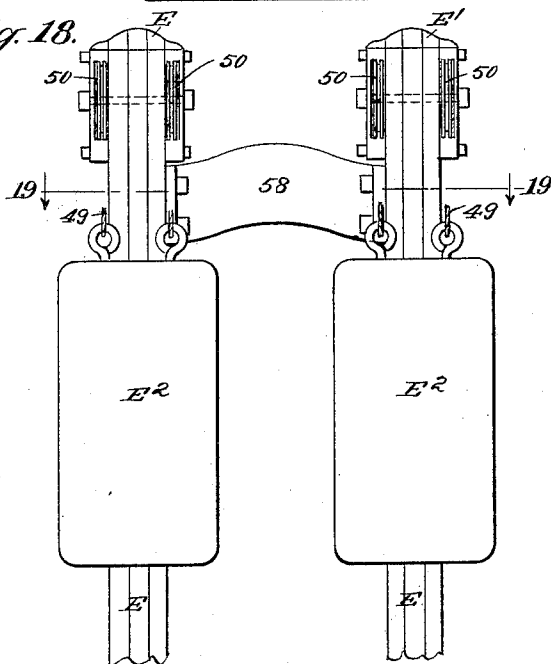


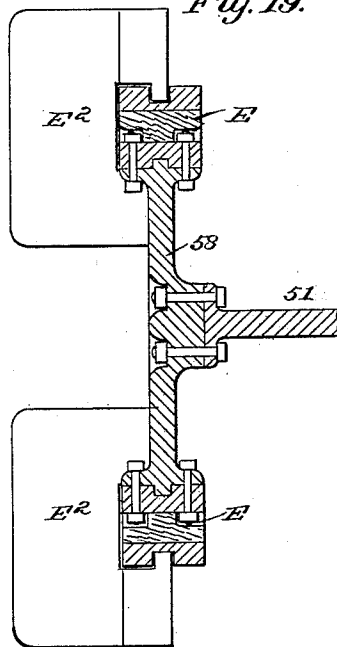
Fig. 18.



WITNESSES:

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C. Sedgwick

Fig. 19.



INVENTOR:

Charles Sprewitz

UNITED STATES PATENT OFFICE.

CHARLES SPREWITZ, OF NEW YORK, N. Y.

VENEERING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 477,158, dated June 14, 1892.

Application filed February 10, 1891. Serial No. 380,906. (No model.)

To all whom it may concern:

Be it known that I, CHARLES SPREWITZ, of New York city, in the county and State of New York, have invented a new and Improved Veneering-Machine, of which the following is a full, clear, and exact description.

My invention relates to an improved veneering and wood-drying machine, and has for its object to produce a machine of simple, durable, and economic construction, and provide a means whereby veneers may be effectively and expeditiously flattened, heated, and set out in large quantities.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a partial side elevation and vertical section, the section being taken on the lines 1 1 of Figs. 2 and 5. Fig. 2 is a plan view of the machine. Fig. 3 is a plan view of the upper heating-table, and Fig. 4 is a bottom plan view of the lower heating-table. Fig. 5 is a vertical transverse section taken practically on the line 5 5 of Fig. 1. Fig. 6 is a partial longitudinal section through the upper heating-table. Fig. 7 is a partial vertical section through two of the tables and through links connecting the same, the section being taken practically on the line 7 7 of Fig. 8. Fig. 8 is a side elevation of the view shown in Fig. 7. Fig. 9 is a transverse section through one of the stiles, the section being taken on the line 9 9 of Fig. 5. Fig. 10 is a transverse section through the stile and weight, the section being taken on the line 10 10 of Fig. 5. Fig. 11 is a detail sectional view of the upper portion of the base, said section being taken near the margin of the same. Fig. 12 is a horizontal section through the base, said section being taken on the line 12 12 of Fig. 1. Fig. 13 is a horizontal section through one of the pillars of the base, the section being taken practically on the line 13 13 of Fig. 14; and Fig. 14 is a partial vertical section through one of the pillars, the section being taken on the line 14 14 of Fig. 13. Fig. 15 is a partial vertical section through the upper portion of the heating-chamber and a rack

connected therewith. Fig. 16 is a detail view illustrating the sliding connection between the steam-supply and the heating-tables. Fig. 17 is a plan view, partially in section, of a single slightly-modified form of the machine. Fig. 18 is a side elevation of one set of stiles and weights connected therewith employed in the modified form of the machine, and Fig. 19 is a horizontal section taken practically on the line 19 19 of Fig. 18.

The base A of the machine is preferably rectangular and is provided in its sides and ends with a series of doors 10, and is so constructed that a single chamber B is formed therein. The base is preferably built directly upon the floor of the structure in which the machine is to be located, and the base is so located upon the floor that access may be readily obtained to either side or end.

In the center of the chamber B of the base a series of pillars or columns C is erected, extending from the floor to the top of the base. These pillars are constructed of metal and are made, preferably, in two sections 11 and 12, bolted or otherwise secured together. The pillars are hollow and preferably rectangular in cross-section, or essentially so. The sections of the pillars are flanged, and said sections are united by bolts passed through the flanges. The sections are also flanged at top and bottom, the latter flanges being bolted to the upper wall and floor of the chamber. At opposite sides of each pillar vertical plates 13 are located, which plates are placed some distance from the sides of the pillars, forming compartments 14. The plates 13 are secured to the pillar, preferably through the medium of bolts 15, and the compartments 14 are divided into a series of sub-compartments 14^a by a series of horizontal pins or lugs 16, arranged at predetermined intervals apart, the said pins or lugs being preferably arranged at or near the side edges of the plates, as shown in Figs. 13 and 14, and may be integral either with the pillars or with the plates, as in practice may be found most desirable.

In each of the sub-compartments 14^a of the pillars a horizontal bar 17 is held to slide, and the bars are of much greater length than the width of the columns, whereby they may be shifted to extend beyond the faces of the columns contiguous to the sides of the base or beyond one of said sides only. When the latter arrangement is made, the bars will extend

nearly to the side of the base, as shown in Fig. 12. The pillars C virtually divide the chamber B into two communicating compartments *b* and *b'*. In the compartment *b* a series of brackets 18 is secured to the upper wall of the base, the said brackets being arranged in two parallel and spaced rows, as illustrated in Fig. 5. These brackets are adapted to form slideways for a rack 19, which rack consists of a board or plate *a*, of a length nearly equal to the length of the base-chamber, and a series of pins *a'*, which are projected downward from the under face of the plate or board, and a similar rack is located in the bottom portion of the sub-compartment *b*, as is likewise best shown in Fig. 5, the pins of the latter rack being made to extend upward. The lower rack 19 rests upon longitudinal coils 20 of steam-pipes, which are laid upon transverse angle-beams 21, attached to the plates upon the floor of the base, as illustrated in Fig. 12. A second coil 22 of steam-pipes is located in the bottom of the sub-compartment *b'* of the base and the two coils are connected in any suitable or approved manner. These coils of pipe exhaust at one side of the base, as illustrated at *a*², and receive steam from the supply-pipe 23, located at the opposite side of the base, the exhaust and supply being preferably arranged at diagonally-opposite corners. The entire inner surface of the chamber C is provided with a lining 24 of sheet metal, such as zinc. This lining covers the sides, ends, and doors therein and the top and bottom of the chamber.

A number of steam or heating tables are located upon the base, three tables being illustrated, lettered, respectively, D, D', and D². The tables partake, substantially, of the same contour of the base, and the lower table consists, preferably, of a plate 25, thickest at its margins. The plate 25 between the margins is provided with a series of teats or spurs 26. The back of the plate 25, which may be termed the "body-plate" of the table, has produced thereon a series of longitudinal ribs 27 and transverse ribs 28, the said ribs being preferably arranged in panels, as illustrated in Fig. 4, and adapted as strengthening-ribs for the tables. Certain of the transverse ribs at predetermined intervals apart are carried beyond the side edges of the table, as illustrated at *d*, the projecting ends *d* of these ribs being adapted to serve as guideways.

The table D, which is the lowermost one of the set, is supported upon the base by ribs 27 and 28, and the said lowermost table D may be secured to the base in any suitable or approved manner. Thus it will be observed that the ribs 27 and 28 serve both to strengthen the table and as supports therefor. The table is completed by the addition of a cover-plate 29, which rests upon the margins of the bed or body-plate 25 and upon the teats or spurs of said plates. By this means each table is provided with an interior chamber, and the teats or spurs in the chamber constitute baffle pro-

jections, as they break the currents of steam or hot air or whatever heating agent may be passed through said chamber. The cover-plate is secured to the body-plate or table preferably through the medium of bolts 30, which are passed through the marginal portions of said body-plate, as is best illustrated in Figs. 6 and 7. The edges of the cover-plate, however, are bent upward and inward to form angular marginal flanges, which flanges enter and are secured in suitable grooves formed in the sides of the body-plate.

The center table D' is constructed in the same manner as is the lowermost table D, but the ribs 27 and 28 are omitted, both the upper and lower faces of the table being flat. The construction of the uppermost table D² differs from that of the lowermost table only in that the ribs are located upon the upper face of the table, and a number of circular sockets 32 is formed, preferably at the junction of the panels of ribs, as is best illustrated in Fig. 3. The smooth surfaces of the various tables are made to face each other, and a connection is effected between the steam-supply pipe 23 and the upper table through the medium of a feed tube or tubes 33. A like connection 34 is effected between the supply-pipe 23 and the center table, and a pipe connection is also made between the said steam-supply pipe and the lowermost table. The pipes 33, 34, and 35 are connected with the tables near one end at one side, and the steam is discharged from the tables through the medium of a series of exhaust-pipes 36, located at the opposite side and end of the tables, as is best shown in Figs. 1 and 2. The exhaust-pipes 36 are preferably of like construction to the feed-pipes. The lowermost table D is stationary, but the tables located above it are adapted to be raised and lowered. Consequently both the steam feed and exhaust pipes for these latter tables are made in two telescopic sections *e* and *e'*, as best shown in Fig. 16, the inner section being properly packed at the extremity of the outer section in any suitable or approved manner. The means of packing illustrated consists of a sleeve 37, screwed upon the lower extremity of the upper section *e*, the lower end of which sleeve is flanged to maintain in position a gasket or packing 38 and to clamp the exterior surface of the lower section *e'*.

Each of the feed-pipes 33, 34, and 35 is provided with a suitable valve 39.

The uppermost and intermediate tables D' and D² are connected by a series of links 40, which links are preferably located at the sides of the table. The said links are illustrated in detail in Figs. 7 and 8. If the uppermost table is provided with three sockets 32, three stiles E are located at each side of the machine. The stiles are secured to the base—in fact, constitute a portion thereof, as shown in the section, Fig. 12—and the stiles are of sufficient length to extend vertically upward some distance above the uppermost table.

The stiles are arranged in horizontally-aligning pairs, one stile of a pair being at each side of each table-socket 32, and the tables are guided in their upward movements by the projecting portions *d* of their ribs engaging with the side surfaces of the stiles, the said projecting sections of the ribs being spaced a suitable distance to neatly clamp the stiles. Each stile is provided at its upper end with an enlarged head *E'*, and the said stiles preferably consist of a center beam 41, of hard wood, and metal beams 42, which are secured one to each side surface of the wooden beam, the three beams being bound together to constitute a single structure by means of bolts, rivets, or their equivalents.

Below the head *E'* of each stile a vertical groove or channel 43 is made in each side, and upon each stile a weight *E*² is held to slide. The weights are provided with a channel or recess 44 in their inner faces to receive a portion of the outer surfaces of the stiles, as is best illustrated in Figs. 9 and 10, and the said weights at their recessed portions are provided with ribs or tongues 45, which enter the channels 43 of the stiles, and by this means the weights are guided and held to slide upon the stiles. In order that the weights may be so attached and also be readily removed when desired, they are made in two sections 46 and 47. The section 46 comprises almost the entire portion of the weight, as the section 47 consists only of a small block which is attached to the section 46 at one side, and the block carries one of the ribs 45, the other being carried by the main section 46.

The weights are adapted to more than counterbalance the weight of the movable tables *D'* and *D*². In fact, when pressure is not exerted upon said tables the weights are adapted to elevate them. Therefore the weights are connected with the movable tables, and the connection is effected in the following manner: In front of each stile *E* two eyes 48 are secured to the upper surface of the upper table, and the lower end of a cord, rope, or chain 49 is fastened to each of the eyes. The cords, ropes, or chains are made to pass over friction-pulleys 50, located in the heads of the stiles, and the opposite ends of said cords, ropes, or chains are secured to the upper edges of the weights. Each cord or chain 49 passes over a pulley. Therefore two pulleys are located in the head of each stile when two cables are employed to connect each weight with the table. The transversely-aligned stiles, which constitute a pair, are connected by yokes 51, which yokes are preferably secured to the stiles by means of bolts 52, which bolts pass into the metal sections of the stiles, as shown in Fig. 9, and a rib 53 is preferably formed upon each end of each yoke, adapted to enter correspondingly-shaped grooves in the wooden sections of the stiles, as is also best shown in Fig. 9. In the center of each yoke a threaded aperture is formed, adapted to receive a screw 54, and upon the lower end

of each of the screws a hand-wheel 55 is secured, while integral with the under face of the hand-wheel or attached thereto a hub-section 56 is produced, the said hub-sections of the hand-wheels being adapted to enter the table-sockets 32, as is best illustrated in Fig. 1. The base is made slightly larger than the table, in order that a metal tray or trough 57 may be embedded in the top of the base in such manner as to extend entirely around the table *D*, attached to the base. This tray or trough is adapted to receive any excess of glue that may be pressed from the slabs during the operation of the machine.

In Figs. 1 and 2 I have illustrated a machine of great length; but the machine may be made much smaller, as shown in Fig. 17. When the table is so constructed that but one hand-wheel is employed in the operation thereof, the construction of the upper portion of the machine is made to vary somewhat from that heretofore described. The difference consists in the fact that two stiles *E* are located at each side of the machine, and said stiles at each side are connected by a bar or beam 58, said bar or beam 58 being secured to the stiles immediately beneath the heads thereof, as shown in Fig. 18, and the yoke in which the screw of the hand-wheel is located, instead of being attached directly to the stile, is secured by means of bolts or otherwise to the central portions of the connecting bars or beams 58, as illustrated in Fig. 19. As each stile is provided with a sliding weight, the tables in the small machines have connected therewith four weights.

In the operation of the machine, if the veneers of two piano-covers, for instance, are to be fixed and the process of veneering completed, one cover will be placed between the lowermost and intermediate tables and the next between the intermediate and uppermost tables, or a number of covers may be placed between said tables, if the machine be of sufficient size. The steam is turned on from the supply-pipe 23 and permitted to circulate through the tables, the teats therein serving to hold the steam a sufficient length of time to thoroughly heat the tables and yet permit of ample circulation. While the steam is being introduced in the tables the hand-wheels 55 are manipulated to cause the hub-sections thereof to exert pressure upon the uppermost table, whereby it and the intermediate table are forced downward. When the articles to be fixed have been thoroughly pressed, they are left in that position and the glue is dried by the action of the heat emanating from the tables. When the tables become so heated that the operator cannot bear his hand thereon, the steam is turned off. It is evident that when the tables are pressed downward the veneer-sections are crowded together and any excess of glue will be forced from the veneer and be caught by the trays or troughs 57.

If more articles are to be finished than the

tables would accommodate if but one layer were placed between two opposed tables, I employ a sufficient number of plates constructed of zinc or other sheet metal, which plates are made to intervene the rows of articles to be finished and placed between opposing tables. It is necessary that these plates should be heated before being placed in position upon the tables, and the heating of the plates is accomplished by placing them in the racks located in the sub-chamber *b* of the base-chamber B.

If the plates are not needed and it is desired to use the base-chamber entirely for drying wood before being glued, the racks 19 may be withdrawn from their slideways and removed from the machine and the bars 17 beslid in their bearings, so as to extend beyond the sides of the pillars. These bars also serve as racks for the reception of wood or any other article to be slowly dried. By placing the bars 17 in the position shown in Fig. 5 one side of the chamber may be utilized for drying purposes and the other side may be contain the racks 19 and be employed for heating the spacing-plates above referred to.

I desire it to be understood that although the drying-chamber has been specifically shown and described I do not claim such construction in the present application, but reserve it as subject-matter for a future application.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a veneering-machine, a heating-table having an inlet and an outlet opening and comprising a body-section provided with a marginal rib upon one face and also with a series of spurs and a cover-plate concealing the spurs and attached to the ribs, substantially as described, whereby a central chamber is obtained, as and for the purpose set forth.

2. In a veneering-machine, a series of heating-tables located one above the other, certain of which tables are adjustable, each table being provided with an inlet and an outlet opening and comprising a body-section provided with a marginal rib upon one face and also with a series of spurs, and a cover-plate concealing the spurs and attached to the ribs, weights connected with the movable tables, links also connected with the movable tables, whereby they move together, and pressure devices exerting tension upon the tables, substantially as and for the purpose specified.

3. In a veneering-machine, a heating-table having steam inlet and exhaust openings and comprising a body-section provided with a marginal rib upon one face and also with a series of spurs and a series of strengthening-ribs upon the opposite face and a cover-plate resting upon the spurs and attached to the marginal rib, as and for the purpose set forth.

4. In a veneering-machine, the combination,

with a series of heating-tables provided with steam inlets and outlets, and an inclosed chamber containing baffle projections, certain of which tables are movable, of links connecting the movable tables, weights connected with the movable tables, a pressure device engaging with one of the movable tables, and a trough located beneath the margin of the fixed table, substantially as shown and described.

5. In a veneering-machine, the combination, with a fixed and a movable heating-table arranged one above the other, each being provided with an interior chamber having inlets and outlets, of stiles located near the sides of the tables, weights held to slide upon the stiles and connected with the movable table, yokes connecting the stiles, and followers supported by the yokes and bearing upon the movable tables, as and for the purpose specified.

6. In a veneering-machine, the combination, with a fixed heating-table and movable heating-tables operating to and from the fixed table, each table being provided with an interior chamber having an inlet and an outlet, of a link connection between the movable tables, stiles located near the sides of the table, movable weights held to slide upon the stiles and connected with the movable tables, yokes connecting the stiles, and a follower bearing against and adapted to exert pressure upon one of the movable tables, substantially as described.

7. In a veneering-machine, the combination, with a fixed heating-table and movable heating-tables capable of being carried to and from the fixed table, each table being provided with an interior chamber having an inlet and an outlet and containing baffle projections, of links connecting the movable tables, stiles located near the tables, weights held to slide upon the stiles and connected with the movable tables, a follower bearing against and adapted to exert pressure upon one of the movable tables, and means, substantially as described, for disposing of the overplus veneering liquid, as and for the purpose specified.

8. In a veneering-machine, the combination, with a fixed heating-table and movable heating-tables, each provided with an interior heating-chamber having an inlet and an outlet, the upper movable table being provided with a socket in its upper face, of links connecting the movable tables, stiles located near the tables, weights held to slide upon the stiles and connected with the upper tables, a yoke connecting the stiles, a screw held to turn in the yoke, and a wheel secured to one end of the screw and provided with a hub adapted to enter the socket of the uppermost table, as and for the purpose set forth.

CHARLES SPREWITZ.

Witnesses:

J. FRED. ACKER,
E. M. CLARK.